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SHORT REPORT

# Popliteal Aneurysm: a Late Complication of Treatment for Rickets?

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## Introduction

Popliteal aneurysm is the commonest peripheral aneurysm, with the majority occurring in older men (male to female ratio 30:1). Surgical techniques for repair were described in the fourth century by Philagrius.[1] The condition was common in the cavalry, and thought to be due to post-stenotic dilatation following compression at the adductor hiatus[2] or repeated flexion and extension at the knee. The contemporary aetiology of the condition however is atherosclerosis or acute trauma in more than 95% of cases. Although we can find no published record of popliteal aneurysm caused by chronic extrinsic compression, axillary artery aneurysms caused by crutch trauma have been described.[3,4] We present an unusual case, where compression just below the adductor hiatus by the use of a splint to correct childhood rickets, may have been contributory.

## Case Report

A fit 93-year-old man with no adverse cardiovascular history or risk factors (other than age), presented with a history of many years of a swelling in his left popliteal fossa, which had recently enlarged. Clinical examination revealed a 6 cm popliteal aneurysm, with good distal pulses. Further vascular examination was unremarkable. The patient gave no history of recent local trauma but concisely described the wearing of a corrective brace for several years as an infant and young child, for rickets. The brace was worn on the left leg only, and the upper limit rested above the knee, just below the adductor hiatus, at the exact position of the subsequent aneurysm. Duplex examination confirmed the diagnosis of a large, saccular popliteal aneurysm arising from a short section of artery in an unusual position, approximately 2 cm below the adductor hiatus. An arteriogram confirmed the localised nature of the disease, and also clearly demonstrated evidence of tibial bowing from the childhood rickets (Fig. 1). The aneurysm was repaired surgically, using an inlaid vein graft. The patient made an uncomplicated recovery.

## Discussion

Rickets was a common condition at the turn of the century, and the contemporary treatment of the

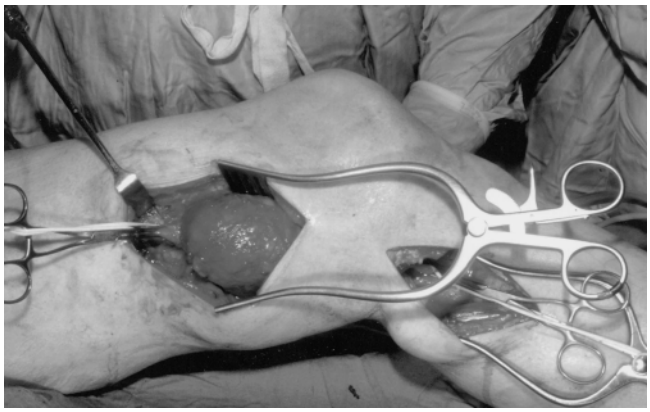

**Fig. 1.** Intra-operative photograph of popliteal aneurysm, demonstrating its position.

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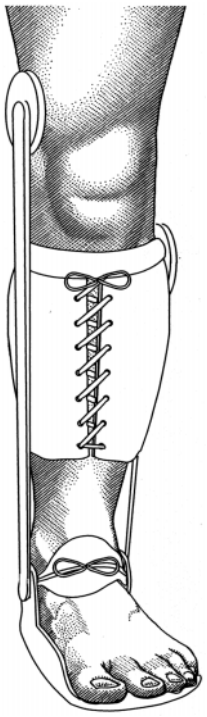

**Fig. 2.** The Knight bow-leg brace, worn for the correction of Rickets in children.

subsequent below knee tibial bowing in walking infants was the Knight bow leg brace.[5] The brace consisted of two side-bars reaching above the medial condyle on the inner side and below the knee on the other. The brace was held in place by a foot piece, with a joint at the ankle and a lacing, drawing the knee and leg toward the inner bar (Fig. 2). Corrective treatment would be for a minimum of a year, but was prolonged in this patient's case. Unusual positioning of this aneurysm, combined with a lack of other risk factors, may point to a local traumatic cause. This case highlights the possibility that chronic local pressure arising from wearing a corrective brace may have lead to arterial damage and ultimately late aneurysm formation.

## References

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